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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/585,862	07/11/2006	Luigi Mocchia	8722.026.US0000	7750

77176 7590 12/23/2009

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EXAMINER	
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ART UNIT	PAPER NUMBER
1796	

MAIL DATE	DELIVERY MODE
12/23/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/585,862	MOCCHIA, LUIGI	
	Examiner	Art Unit	
	ALEXANDER C. KOLLIAS	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 September 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *17-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *17-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. All outstanding objections and rejections, except for those maintained below, are withdrawn in light of applicant's amendment filed on 9/9/2009.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior office action.

3. The new grounds of rejection set forth below are necessitated by applicant's amendment filed on 9/9/2009. In particular, original Claims 1, 20 , and 24 have been amended to recite limitations not previously presented. Specifically, claim1 has been amended to recite method steps of "molding a product, lacquering a product, painting a product and drying coating a product", claim 20 has been amended to recite that the plastic composition is initially present as a solid molding compound in the form of powder, tablets, pellet or granules before forming into a molded product" and claim 24, has been amended to recite the method step of applying the thermosetting resin to the product in liquid form as a lacquer or paint. Thus, the following action is properly made final.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 17-36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claim 17 recites "an antivirus effective amount of an inorganic derivative". The phrase "an antivirus effective amount" renders the scope the claim indefinite as it is not clear what amount is considered by Applicant to be an antivirus effective amount. For example does an antivirus effective amount mean a minimum inhibition concentration (MIC), an amount that completely destroys any presence of the virus, an amount that destroys some percentage of the virus but not all, etc?

7. Claim 33 recites "an antivirus effective amount is an anti-SARS corona virus effective amount". The phrase "an antivirus effective amount is an anti-SARS corona virus effective amount" renders the scope the claim indefinite as it is not clear what amount is considered by Applicant to be an antivirus effective amount against SARS. For example does an antivirus effective amount mean a minimum inhibition concentration (MIC) against SARS, an amount that completely destroys any presence of the SARS virus, an amount that destroys some percentage of the SARS virus but not all, etc?

8. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9. Claim 17-36 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

10. Claim 17 recites a method for providing a "dry coated product" which is obtained by "dry coating product". However, it is noted that the while the Specification on Page 2 Paragraph 2 discloses that the "result powder or granules can be subjected to conventional molding techniques" and original claim 21 recites a "method where the composition is present as a dry constituent in a powder coating", there is no support in the Specification as originally filed for a "dry coated product" and "dry coating a product" as presently recited in claim 17.

11. Claim 20 recites a method "wherein the plastic composition is initially present as a solid molding compound in the form a powder, tablets, pellets or granules before forming into a molding product". However, it is noted that while there is support in the present Specification on Page 1 Paragraph 6 and Page 2 Paragraph 2 for a thermosetting plastic which is initially in the form of a powder which is then molded by conventional molding techniques, there is no support for all generic plastics, i.e. those that are not thermosetting, to be initially in powder form and then molded into a product as recited in the present claims.

12. Claim 21 recites that the plastic composition is applied as a dry constituent in a powder coating on the product". However, it is noted that the while the Specification on Page 2

Paragraph 2 discloses that the "result powder or granules can be subjected to conventional molding techniques" and original claim 21 recites a "method where the composition is present as a dry constituent in a powder coating", there is no support in the Specification as originally filed for a method of applying the dry constituent in a powder coating on a product as presently recited in claim 21.

Claim Rejections - 35 USC § 102

13. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

14. Claims 17-18, 26, and 31-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Laurin et al (US 4,603,152) as evidenced by Lewis (see attached pages of *Hawley's Condensed Chemical Dictionary*).

Regarding claims 17-18, 26, and 31-32, Laurin discloses a method for coating the surface of catheters and catheter adapters with compositions comprising thermosetting resins such as acrylonitrile-butadiene-styrene (ABS) and polyvinyl chloride polymers and antimicrobial compounds such as silver oxide (Col. 5 Examples 1-3). Based on the amounts of silver oxide utilized in Examples 1-3, it is the Examiner's positions that the amount of silver oxide in the coating meets the limitations drawn to an effective amount of an inorganic silver derivative as presently recited in claim 17. Although the reference does not explicitly disclose that the coating possess is "lacquering", attention is drawn to Lewis which discloses lacquer and thereby lacquering as a process wherein a protective or decorative coating which is formed from

evaporation of solvent. Given that Laurin discloses that the objects were dipped into the disclosed composition and that the solvents, .i.e. methylene chloride and tetrahydrofuran were allowed to evaporate, it is clear that Laurin discloses a process of lacquering a molded object.

In light of the above, it is clear that Laurin as evidenced by Lewis anticipates the presently recited claims.

15. Claims 17-20, 22-23, 25, 32-33, and 36 are rejected under 35 U.S.C. 102(b) as being anticipated by Gueret et al (US 5,393,809) as evidenced by *United States Department of Labor, Occupational Safety & Health Administration (OSHA)* (see attached pages to previous Office Action).

Regarding claims 17-20, 22-23, 25, 32-33 and 35, Gueret et al discloses compositions and methods of forming compositions comprising urea-formaldehyde resin, particulate organic filler such as wood powder and antiseptic agents such as silver sulfate and silver nitrate which are used to form molded articles (Column 3, Lines 20-25 and Column 4, Lines 15-34, claims 1-4). Given that the reference discloses that the article comprising the above composition exhibit controlled release characteristics, it is clear that the surface of the molded articles will have antivirus activity. The reference discloses that the urea-formaldehyde resin comprising a filler (cellulose) is in powder form and immersed in a solution containing a silver antiseptic agent before utilized for molding (Column 3, Lines 54-68 and Column 4, Lines 1-13). Additionally, the reference discloses that resin comprises 30 to 98 wt % while organic filler such as wood powder comprises 2 to 70 wt % of the composition. The filler is impregnated with 0.01 to 50 wt % of

antiseptics such as silver nitrate (Column 2, Lines 22-25, Lines 39-56). Given the amount of antiseptic disclosed by the reference, it is the Examiner's position that the amount disclosed meets the limitation drawn to an effective amount of silver compound presently recited in claim 17 and SAR corona virus effective amount in claim 33. Further it is noted that the reference discloses that the polymeric synthetic polymer is an powder form and then molded (Column 3, Lines 3-20). Particular attention is drawn to Col. 3 Lines 54-67 and Col. 4 of the reference which urea-formaldehyde resin in granular form to which the active compound is added and then molded, which meets the limitations recite in claim 17 drawn to molding articles and the process recited in claim 20. Further given that the reference disclose the identical silver compound, i.e. silver sulfate utilized in the present invention it is clear that the product disclosed by the reference will have a surface with anti-SARS corona virus activity as presently recited in claim 33.

Although the reference does not disclose that the urea-formaldehyde resin releases formaldehyde, it is the Examiner's position that the resin disclosed by the reference will inherently release formaldehyde. Evidence to support this position is found on Page 1 of *United States Department of Labor Occupational Safety & Health Administration* reference which discloses that urea-formaldehyde resin comprise un-reacted formaldehyde residues which may be released from products.

In light of the above, it is clear that Gueret as evidenced by OSHA anticipates the presently recited claims.

16. Claims 17-18, 21, 26-27 and 31-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Asai et al (US 5,137,957).

Regarding claims 17-18, 21, 26-27 and 31-32, Asai discloses a method of preparing an antibacterial polymer comprising a mixture of silver oxide and a thermoplastic copolymer utilized for form articles such as sheets, i.e. films or containers .i.e., bottles (Column 12, Lines 5-12, Column 2, Lines 35-48, and Column 4, Lines 51-66). Although the reference does not disclose explicitly discloses that the molded articles will have a surface having antivirus activity, it is clear that the antibacterial additives, silver oxides, dispersed throughout the resin will provide antivirus activity to the surface of the disclosed articles. Further it is noted that the disclosed antibacterial articles, i.e., film and bottles meet the limitations recited in claims 26-27 and 32. Furthermore, the reference discloses that the antibacterial compositions is in the form of a powder can be utilized for coating the inner surfaces of cans, caps, and cans lids meeting the limitations drawn to a powder and powder coating recited in claims 20 and 21 (Column 5, Lines 20-31). Additionally, the reference discloses that silver oxide comprises 0.001 to 5 wt % of the composition from the standpoint of cost, antibacterial property, and dispersibility (Column 4, Lines 14-20). Given the amount of the antimicrobial compound disclosed by the reference, it is the Examiner's position that this amount meets the limitations drawn to an effective amount of silver compounds as presently recited in claim 17.

In light of the above, it is clear that Asai anticipates the presently recited claims.

17. Claims 17-18, 25, and 31-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Ohsumi et al (US 5,698,229) as evidenced by Lewis (see attached pages of *Hawley's Condensed Chemical Dictionary*).

Regarding claims 17-18, 25, and 31-32, Ohsumi discloses antimicrobial compositions comprising thermoplastic resins and antimicrobial compounds such as those given by Formula 1, i.e., silver sodium hydrogen zirconium phosphate (Column 2, Lines 27-41 and Lines 51-56, Column 4 Lines 18-50). The reference discloses that the composition is applied to molded articles such as plastic food containers, refrigerators, and chopping boards (Column 6, Lines 58-67 and Column 7, Lines 1-14). Additionally, the reference discloses that the anti-microbial compounds comprises 0.01 to 0.5 parts by weight per 100 parts by weight of the composition thus meeting the limitation drawn to an effective amount of silver compound as presently recited in claim 17 (Column 5, Lines 15-28). The reference discloses that the composition utilizes solvents and coated onto substrates and allowed to dry (Column 3, Lines 4-50, column 6, lines 40-45). Although the reference does not explicitly disclose that the coating possess is "lacquering", attention is drawn to Lewis which discloses lacquer and thereby lacquering as a process wherein a protective or decorative coating which is formed from evaporation of solvent, i.e. drying. Given that Ohsumi discloses that the objects were coated by the disclosed composition and that the compositions were allow to dry, it is clear that Ohsumi discloses a processes of lacquering a molded object.

In light of the above, it is clear that Ohsumi anticipates the presently recited claims.

18. Claims 17-18 and 31-33 are rejected under 35 U.S.C. 102(a) as being anticipated by *Plastics Additives & Compounding* (see attached pages) as evidenced by *Perstorp Product Literature* (see attached pages to previous Office Action).

Regarding claims 17-18 and 31-33, *Plastics Additives & Compounding* discloses a composition and method of forming articles by molding comprising the compound known under the tradename POLYGIENE which provides antiviral effectiveness against SARS corona virus (Page 55-56). POLYGIENE comprises silver-based antimicrobial additives that can kill a wide range of bacteria, yeasts and molds. The reference discloses films and molded sanitary objects such as toilet seats comprising POLYGIENE and silver, meeting the limitations drawn to a molded article with a surface having antivirus activity (Pages 56). The compound POLYGIENE is disclosed as comprising resins known under the tradenames AMINEL and AMITEC which as evidenced by *Perstorp Product Literature* are amino thermoset resins (see Page 1 of reference). Given that the reference discloses that POLYFIENE is effective against SARS and comprises silver compounds, it is clear that the amount of silver in the compound meets the limitations drawn to an effective amount of silver as presently recited in claim 17.

In light of the above, it is clear that *Plastics Additives & Compounding* anticipates the presently recited claims.

19. Claims 17-20, 22-23, and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Mocchia et al (WO 2001/79349) as evidenced by *United States Department of Labor,*

Occupational Safety & Health Administration (OSHA) (see attached pages to previous Office Action).

Regarding claims 17-20, 22-23, and 32, Mocchia discloses molding compositions comprising urea-formaldehyde resins compounded with silver antiseptic agents such as silver sodium hydrogen zirconium phosphate compounds (Page 1, Lines 31-32, Page 2, Lines 1-7 and Lines 30-34, Page 3, Lines 26-29). The composition in powder form comprises urea-formaldehyde resin, silver compounds, and cellulose (Page 10, Lines 15-30 and Page 8, Lines 14-18). Additionally, the reference discloses that the molding composition comprises 0.0001 to 5 wt % of the composition, meeting the limitation drawn to an effective amount of silver compound presently recited in claim 17 (Page 3, Lines 30-34). Further the reference discloses a process of molding said compositions (Page 1, Lines 13-19).

The reference does not disclose that the urea-formaldehyde resin releases formaldehyde, it is the Examiner's position that the resin disclosed by the reference will inherently release formaldehyde. Evidence to support this position is found on Page 1 of *United States Department of Labor Occupational Safety & Health Administration* reference which discloses that urea-formaldehyde resin comprise unreacted formaldehyde residues which may be released from products comprising said resin.

In light of the above, it is clear that Mocchia et al anticipates the presently recited claims.

Claim Rejections - 35 USC § 103

20. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

21. Claims 25 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laurin et al (US 4,603,152) in view of Lewis (see attached pages).

The discussion with respect to Laurin as evidence in Lewis as set forth in Paragraph 14 above are incorporated here by reference

Regarding claims 25 and 29, Laurin teaches all the claim limitations as set forth above. Additionally, the reference discloses that to the mixture of resins such as polymethyl methacrylate physiological antimicrobial metal compounds are added such as silver chloride, silver nitrate, silver sulfate (Column 2, Lines 59-68 and Column 3, Lines 1-5).

While the reference fails to exemplify the presently claimed composition and method nor can the claimed composition and method be "clearly envisaged" from the reference as required to meet the standard of anticipation (cf. MPEP 2 13 1-03), nevertheless, in light of the overlap between the claimed method and composition and the method and composition disclosed by the reference, absent a showing of criticality for the presently claimed method and composition, it is urged that it would have been within the bounds of routine experimentation, as well as the skill level of one of ordinary skill in the art, to use the method and composition which are both

disclosed by the reference and encompassed within the scope of the present claims an thereby arrive at the claimed invention.

22. Claims 30 and 34-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gueret et al (US 5,393,809) in view of *United States Department of Labor, Occupational Safety & Health Administration (OSHA)* (see attached pages to previous Office Action).

The discussion with respect to Gueret and evidence in OSHA as set forth in Paragraph 15 above are incorporated here by reference.

Regarding claim 30 and 34-35, Gueret et al teaches all the claim limitations as set forth above. Additionally, the reference discloses that resin comprises 30 to 98 wt % and organic filler such as wood powder comprises 2 to 70 wt % of the composition. The filler is impregnated with 0.01 to 50 wt % of antiseptics such as silver nitrate (Column 2, Lines 22-25, Lines 39-56). Based on the amount of filler in the composition and the amount of antiseptic impregnated into the filler, it is determined that compounds such as silver nitrate comprise 0.0002 to 35 wt % of the whole composition.

Regarding the amount of antiseptic disclosed by the reference, it is well settled that where the prior art describes the components of a claimed compound or compositions in concentrations within or overlapping the claimed concentrations a prima facie case of obviousness is established. See In re Harris, 409 F.3d 1339, 1343, 74 USPQ2d 1951, 1953 (Fed. Cir 2005); In re Peterson, 315 F.3d 1325, 1329, 65 USPQ 2d 1379, 1382 (Fed. Cir. 1997); In re Woodruff, 919 F.2d 1575, 1578 16 USPQ2d 1934, 1936-37 (CCPA 1990); In re Malagari, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974).

23. Claim 30 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asai et al (US 5,137,957).

The discussion with respect to Asai as set forth in Paragraph 16 above is incorporated here by reference.

Regarding claim 30, Asai teaches all the claim limitations as set forth above. Additionally, the reference discloses that silver oxide comprises 0.001 to 5 wt % of the composition from the standpoint of cost, antibacterial property, and dispersibility (Column 4, Lines 14-20).

Regarding the amount of silver oxide disclosed by the reference, it is well settled that where the prior art describes the components of a claimed compound or compositions in concentrations within or overlapping the claimed concentrations a prima facie case of obviousness is established. See In re Harris, 409 F.3d 1339, 1343, 74 USPQ2d 1951, 1953 (Fed. Cir 2005); In re Peterson, 315 F.3d 1325, 1329, 65 USPQ 2d 1379, 1382 (Fed. Cir. 1997); In re Woodruff, 919 F.2d 1575, 1578 16 USPQ2d 1934, 1936-37 (CCPA 1990); In re Malagari, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974).

24. Claims 26 and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohsumi et al (US 5,698, 229) in view of Lewis (see attached pages of *Hawley's Condensed Chemical Dictionary*).

The discussion with respect to Ohsumi and evidence in Lewis as set forth in Paragraph 17 above are incorporated here by reference.

Regarding claims 26 and 29, Ohsumi et al discloses resins such as polyethylene, polypropylene, polystyrene, polyvinyl chloride, and polyacrylate (Column 3, Lines 15-35). Further the resins maybe in solid or liquid form (Column 2, Lines 52-56).

While the reference fails to exemplify the presently claimed composition and method nor can the claimed composition and method be "clearly envisaged" from the reference as required to meet the standard of anticipation (cf. MPEP 2 13 1-03), nevertheless, in light of the overlap between the claimed method and composition and the method and composition disclosed by the reference, absent a showing of criticality for the presently claimed method and composition, it is urged that it would have been within the bounds of routine experimentation, as well as the skill level of one of ordinary skill in the art, to use the method and composition which are both disclosed by the reference and encompassed within the scope of the present claims an thereby arrive at the claimed invention.

Regarding claim 28, Ohsumi discloses all the claim limitations as set forth above. As discussed above, the reference discloses that the composition is in the form of a powder. Additionally, the reference discloses that the anti-microbial compounds comprise 0.01 to 0.5 parts by weight per 100 parts by weight of the composition (Column 5, Lines 15-28). However, the reference does not discloses a method where the plastic compositions is present as a masterbatch

Lewis discloses a masterbatch as a previously prepared mixture composed of a base material and a high percentage of ingredients in powder from critical to the product being

manufactured. The masterbatch is added to production size quantity during the mixing operation, thereby permitting uniform dispersion of small amounts of additives (Page 703).

Given that Ohsumi discloses a method of preparing the antimicrobial compositions by mixing, incorporating or kneading, and in light of the particular advantages of the masterbatch process as taught by Lewis, it would have been obvious to one of ordinary skill in the art to modify the method of mixing as taught by Ohsumi to include the masterbatch process as taught by Lewis in order to obtain production-size quantities which have uniform dispersion of antimicrobial compounds.

Regarding claim 30, Ohsumi et al discloses all the claim limitations as set forth above. Additionally, the reference discloses that the anti-microbial compounds comprises 0.01 to 0.5 parts by weight per 100 parts by weight of the composition (Column 5, Lines 15-28)

Regarding the amount of antiseptic disclosed by the reference, it is well settled that where the prior art describes the components of a claimed compound or compositions in concentrations within or overlapping the claimed concentrations a prima facie case of obviousness is established. See In re Harris, 409 F.3d 1339, 1343, 74 USPQ2d 1951, 1953 (Fed. Cir 2005); In re Peterson, 315 F.3d 1325, 1329, 65 USPQ 2d 1379, 1382 (Fed. Cir. 1997); In re Woodruff, 919 F.2d 1575, 1578 16 USPQ2d 1934, 1936-37 (CCPA 1990); In re Malagari, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974).

25. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohsumi et al (US 5,698, 229) in view of Lewis (see attached pages of *Hawley's Condensed Chemical Dictionary*)

and Alger (see attached pages of *Polymer Science Dictionary* attached to previous Office Action).

The discussion with respect to Ohsumi et al and evidence in Lewis as set forth in Paragraph 17 above are incorporated here by reference.

Regarding claim 24, Ohsumi discloses all the claim limitations as set forth above. Additionally, the reference discloses that the composition comprises resins such as urea, melamine resins or phenolic resins either is solid or liquid forms and are applied to articles via method such as brushing, spraying, etc and allowed to dry (Column 2 Lines 52-56, Column 3, Lines 15-30, and Column 6, Lines 16-43). However, the reference does not disclose that the resin are urea-formaldehyde or melamine-formaldehyde resin.

Alger discloses that melamine-formaldehyde resins have good heat and chemical resistance while urea-formaldehyde resins are colorless and economical compared to phenolic resins (Page 305 and Page 596).

Given that Ohsumi discloses an antimicrobial composition comprising antimicrobial compounds and resins in liquid forms, and in light of the particular advantages of urea-formaldehyde and melamine-formaldehyde resins as taught by Alger it would have been obvious to one of ordinary skill in the art to include the resin taught by Alger in the compositions of Ohsumi et al with a reasonable expectation of success.

26. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mocchia et al (WO 2001/79349)) in view *United States Department of Labor, Occupational Safety & Health*

Administration (OSHA) (see attached pages to previous Office Action) and Lewis (see attached pages of *Hawley's Condensed Chemical Dictionary* attached to previous Office Action).

The discussion with respect to Mocchia et al and evidence in OSHA as set forth in Paragraph 19 above are incorporated here by reference.

Regarding claim 28, Mocchia et al teaches all the claim limitations as set forth above. Additionally, the reference discloses that the molding composition comprises 0.0001 to 5 wt % of the compositions (Page 3, Lines 30-34). However, the reference does not disclose that the plastic composition is present in a masterbatch

Lewis discloses a masterbatch as a previously prepared mixture composed of a base material and a high percentage of ingredients in powder from critical to the product being manufactured. The masterbatch is added to production size quantity during the mixing operation, thereby permitting uniform dispersion of small amounts of additives (Page 703).

Given that Mocchia discloses a method of preparing the antimicrobial compositions by mixing polymers, fillers, and antibacterial compounds in powder form, and in light of the particular advantages of the masterbatch process as taught by Lewis, it would have been obvious to one of ordinary skill in the art to modify the method of mixing as taught by Mocchia et al to include the masterbatch process as taught by Lewis in order to obtain a production-size quantities which has uniform dispersion of antimicrobial compounds.

27. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mocchia et al (WO 2001/79349) in view of *United States Department of Labor, Occupational Safety & Health Administration (OSHA)* (see attached pages to previous Office Action).

The discussion with respect to Mocchia et al and evidence in OSHA as set forth in Paragraph 19 above are incorporated here by reference.

Regarding claim 30, Mocchia teaches all the claim limitations as set forth above. Additionally, the reference discloses that the molding composition comprises 0.0001 to 5 wt % of the compositions (Page 3, Lines 30-34).

Regarding the amount of antiseptic disclosed by the reference, it is well settled that where the prior art describes the components of a claimed compound or compositions in concentrations within or overlapping the claimed concentrations a prima facie case of obviousness is established. See In re Harris, 409 F.3d 1339, 1343, 74 USPQ2d 1951, 1953 (Fed. Cir 2005); In re Peterson, 315 F.3d 1325, 1329, 65 USPQ 2d 1379, 1382 (Fed. Cir. 1997); In re Woodruff, 919 F.2d 1575, 1578 16 USPQ2d 1934, 1936-37 (CCPA 1990); In re Malagari, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974).

Response to Arguments

28. Applicant's arguments filed 9/9/2009 have been fully considered but they are not persuasive.

29. Applicant argues that anti-bacterial properties cannot be equated with antiviral properties as set forth in the previous Action. However, while it is agreed that a compound possessing anti-bacterial properties does not necessarily yield anti-viral properties, it is not agreed that the silver compounds in the applied prior art of record do not have both antibacterial and antiviral properties. For example, evidence of the Examiner's position regarding the antiviral properties of

silver is found on Page 3 Paragraph [0022] of Gibbins et al which discloses that it is "[k]nown that heavy metals such as gold, platinum, silver, zinc etc, exert antimicrobial activity at very low concentrations against a broad spectrum of organism including bacteria, protozoa, fungi and viruses". Given that the reference discloses that silver exerts antimicrobial activity against microorganisms including viruses, the Examiner's position remains, absent evidence to the contrary, that the silver compounds disclosed in the prior or reference will be effective against viruses.

Further, evidence supporting the Examiner's position in found in Col. 2, Lines 10-14 of Sanford et al which discloses the use of silver containing species as an antimicrobial which the reference goes no to further define as an agent capable to destroying or inhibiting the growth of microorganism such as bacteria, yeast, fungi, algae, as well as viruses. Of particular relevance is the disclosure in Col. 4 Lines 33-37 of the reference which discloses the use of silver sulfate having antiviral activity specifically against SARS corona virus. It is noted that silver sulfate is the identical active ingredient disclosed by Gueret et al. Thus, the Examiner's position remains, absent evidence to the contrary that the silver compound, silver sulfate, disclosed in Gueret et al will inherently have antiviral properties, particularly against the SARS corona virus.

Newman et al in Paragraph [0005] discloses that silver ions have been shown in the past to have antibacterial, antiviral, and antifungal activity. It is noted that the active ingredient disclosed by Ohsumi et al is a silver ion supported on an inorganic support. Thus, the Examiner's position remains, absent evidence to the contrary, that the silver compound disclosed by Ohsumi will possess antiviral properties. Furthermore, while Ohsumi et al refers to the silver compound as being antimicrobial and does not explicitly disclose "antiviral", the Examiner's

position remains that the silver compounds disclosed by the reference will have antiviral properties. Evidence to support the Examiner's position is found in Page 92 of *Dorland's Illustrated Medical Dictionary* which defines the term "antimicrobial" as "an agent that kills microorganisms or suppresses their multiplication or growth". Furthermore, Page 822 of the same reference goes on to define the term "microorganism" as a "minute living organism", including "bacteria, rickettsiae, viruses, molds, yeasts, and protozoa". Thus, the Examiner's position remains, absent evidence to the contrary that the silver antimicrobial compounds disclosed by Ohsumi et al will inherently function as antiviral compounds.

Regarding the silver oxide compounds disclosed by Laurin et al and Asai, evidence supporting the Examiner's position that silver oxide possess antiviral properties in found on Page 3 Paragraph [0058] of Jose-Yacaman et al which discloses that silver oxides, the identical ingredient disclosed by Laurin et al and Asia as anti-viral agent. Furthermore, while Laurin et al refers to the silver compound as being antimicrobial and does not explicitly disclose "antiviral", the Examiner's position remains that the silver compounds disclosed by the reference will have antiviral properties. Evidence to support the Examiner's position is found in Page 92 of *Dorland's Illustrated Medical Dictionary* which defines the term "antimicrobial" as "an agent that kills microorganisms or suppresses their multiplication or growth". Furthermore, Page 822 of the same reference goes on to define the term "microorganism" as a "minute living organism", including "bacteria, rickettsiae, viruses molds, yeasts, and protozoa". Thus, the Examiner's position remains, absent evidence to the contrary that the silver antimicrobial compounds disclosed by Laurin will function as an antiviral compound.

Regarding the silver compound disclosed by Mocchia, while the reference refers to these compounds as being "antiseptic", as evidenced by *Hawley's Condensed Chemical Dictionary* an antiseptic is a compound that retards or stops the growth of microorganisms. The term "microorganism" as defined by *Dorland's Illustrated Medical Dictionary* (see Page 882) encompasses viruses, i.e. "a minute living organism", including "bacteria, rickettsiae, viruses molds, yeasts, and protozoa". Thus, the Examiner's position remains, absent evidence to the contrary, that the silver compounds disclosed by Mocchia will inherently function against viruses.

Furthermore, Applicant argues that a virus is a not a microorganism, as discussed above *Dorland's Illustrated Medical Dictionary* (see Page 882) discloses a microorganism as a, i.e. "a minute living organism", including "bacteria, rickettsiae, viruses molds, yeasts, and protozoa". It is clear that viruses are encompassed within the term "microorganism".

30. Applicant argues that because none of the applied prior art of record recognizes antivirus activity per se for the [silver] compounds, that there is no inherency in providing a plastic composition with an antivirus effective amount of such compounds. The anti-viral activity of the compounds disclosed in the prior art of record was addressed above, further it is noted that inherency needs not be recognized at the time of the invention. There is no requirement that a person of ordinary skill in the art would have recognized the inherent disclosure at the time of invention, but only that the subject matter is in fact inherent in the prior art reference. *Schering Corp. v. Geneva Pharm. Inc.*, 339 F.3d 1373, 1377, 67 USPQ2d 1664, 1668 (Fed. Cir. 2003), MPEP 2112 II. Further it is noted that under the principles of inherency, if a prior art device, in

its normal and usual operation, would necessarily perform the method claimed, then the method claimed will be considered to be anticipated by the prior art device. When the prior art device is the same as a device described in the specification for carrying out the claimed method, it can be assumed the device will inherently perform the claimed process. *In re King*, 801 F.2d 1324, 231 USPQ 136 (Fed. Cir. 1986), MPEP 2112.02.

In response to applicant's argument that the prior art of record does not explicitly disclose the antiviral properties of silver, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

31. Applicant argues that the claims disclose the existence of the presence of free-formaldehyde in the claimed invention. Further the Applicant argues that the applied prior art is silent as to the presence of free-formaldehyde which can released from the composition. However, attention is drawn to the Applicant's claim which recites the following "the composition contains free formaldehyde or a formaldehyde contains compound which can release formaldehyde. Thus, the claim recites that the composition comprises either free formaldehyde or a compound which can release formaldehyde. That is to say, the part of the claims following "or" broadly recites a compound which has the possibility of releasing formaldehyde, i.e. can release. Thus as evidenced by the OSAH report formaldehyde resins can release, the composition disclosed by Gueret et al may release formaldehyde.

32. Applicant argues that Gueret et al does not disclose lacquering. However, as set forth above, the reference discloses a process of molding, i.e. taking a composition in powder form, i.e. polymer granules as recited in the present claims and molding the composition to form an article.

33. Applicant argues that the Laurin reference teaches is coating the disclosed compositions on the interior and exterior of the molded object without disclosing a process utilizing the composition as a lacquer. However, as set forth above, Laurin discloses a process wherein the article after being dipped into the disclosed composition discloses a process of letting the organic solvent evaporate. Although the reference does not explicitly disclose that the coating possess is "lacquering", attention is drawn to Lewis which discloses lacquer and thereby lacquering as a process wherein a protective or decorative coating is formed from evaporation of solvent. Given that Laurin discloses that the objects were dipped into the disclosed composition and that the solvents, .i.e. methylene chloride and tetrahydrofuran were allowed to evaporate, it is clear that Laurin discloses a process of lacquering a molded object as presently claimed.

Conclusion

34. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

35. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEXANDER C. KOLLIAS whose telephone number is (571)-270-3869. The examiner can normally be reached on Monday-Friday, 8:00 AM -5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571)-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. C. K./
Examiner, Art Unit 1796

/Vasu Jagannathan/
Supervisory Patent Examiner, Art Unit 1796